

ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Ernest O. Lawrence, Nobel Laureate, and director of the Radiation Laboratory of the University of California, died last week. Dr. Lawrence's contributions to the welfare of the United States, in the fields of science and public service, had been large. He was a pioneer in the field of nuclear physics, a teacher, and a person who accepted and discharged well many personal and public responsibilities.

Walker Trucking Co., New Britain, Conn., and New England Tank Cleaning Co., Cambridge, Mass., are latest eastern firms to enter field of collecting and disposing (at sea) of radioactive wastes. Walker intends to handle both waste byproduct material (radioisotopes) and waste source material (uranium and thorium). New England Tank would handle only byproduct material. All materials would be in heavy containers, and disposal would be at sea in minimum of 1,000 fathoms. Licenses for the operation will be forthcoming from the USAEC.

No more than 6,200 tons a year of uranium oxide will be sold by the Union of South Africa to the Combined Development Agency, under agreement reached by S. African Atomic Energy Board with representatives of U. S. and Great Britain, countries which make up CDA. In 1957, S. African producers extracted from gold slimes 5,709 tons of uranium oxide all of which was sold to CDA. New agreement, setting ceiling on CDA purchases, allows excess to be sold elsewhere. (Other RAW MATERIALS NEWS, p. 4 this LETTER.)

Newly formed industrial applications division of Radiation Counter Laboratories, Skokie, Ill., will specialize in manufacture of nuclear density and thickness gauges for use in continuous process operations. Stelios Regas, former supervisor with Tracerlab, Inc., will head the new division. (Other PRODUCT NEWS, p. 3 this LETTER.)

Geneva Conference on Peaceful Uses of Atomic Energy, now underway (September 1-13) has U.S. delegation of about 600 headed by Lewis L. Strauss, with some 500 industry people also. At the commercial trade show being held at the Palais des Expositions 52 U.S. companies, and the USAEC, have exhibits. (The 2300 conference papers will be available only at Geneva; British publishing house of Pergamon Press, with U.S. branch at 122 E. 55th St., New York, will apparently be first to offer them in collected form. (Other MEETINGS, COURSES, CONFERENCES, p. 5 this LETTER.)

All mining properties of Vitro Minerals Corp. will be acquired by Susquehanna Corp., a holding company with milling and transportation properties, under contract recently signed. Vitro Minerals, jointly owned by Vitro Corp. of America, and Rochester & Pittsburgh Coal Co., holds uranium properties in Wyoming estimated by the USAEC to contain more than 911,000 tons of uranium ore. Terms of the purchase contract provide for Susquehanna initially to issue 300,000 shares of its stock for all outstanding stock of Vitro Minerals. In addition, Susquehanna will issue additional stock each year, the amount being dependent upon the earnings of the uranium properties. At the current price of Susquehanna stock, about \$11,500,000 will be ultimate price paid for Vitro Minerals. (Other FINANCIAL NEWS, p. 2 this LETTER.)

ATOMIC ENERGY CONTRACT NEWS...

CONTRACTS AWARDED:- On low bid of \$3,620,000 among 12 proposals, Diversified Builders, Inc., Paramount, Calif., have been awarded USAEC contract for construction and installation work on the second major building phase of the experimental breeder reactor no. 2 at the USAEC's national reactor testing station, Idaho Falls, Idaho. Second and third low bids respectively were those submitted by Williams, Chilquist & McArthur Co., Compton, Calif., \$3,660,420, and the Hoffman Construction Co., Portland, Ore., \$3,663,000. The job consists of constructing power plant and cooling tower and completion of the EBR-II reactor plant building. (EBR-II will be an unmoderated and liquid-cooled reactor with a net electrical capacity of 17,500 kw and a thermal output of 62,500 kw. It will use full-size components in a sodium coolant system. Over-all cost is set at \$29,100,000; H. K. Ferguson Co., Cleveland, Ohio, is architect-engineer for the project.)

Contract of Nuclear Development Corp. of America, White Plains, N.Y., with USAEC, for work on sodium-cooled, heavy water moderated nuclear reactor system, has now been extended by the Commission to permit a \$2,300,000 program to (a) establish the potential of the concept as an economic power producer, (b) modify present design to allow construction of pilot plant to provide design and operating data for a large natural uranium reactor, and (c) perform certain research and development work. (The new contract extends an initial \$1,725,000 contract awarded NDA in April, 1957 on this project which looks toward construction of the sodium deuterium reactor at Anchorage, Alaska, by NDA with Chugach Electric System, of Anchorage, providing the site and conventional turbine-generator facilities. Chugach will operate the plant, with the USAEC retaining title to the reactor.)

Under contract with the Atomic Energy Commission of France, 10,000-lbs. of enriched uranium oxide will be supplied the Commission by Nuclear Materials & Equipment Corp., Apollo, Pa. (The firm also supplied 20% enriched uranyl sulfate fuel solution for the small research reactor of Atomics International now being shown at the nuclear trade show in Geneva.)

ATOMIC ENERGY BUSINESS NEWS...

INTERNATIONAL AGREEMENT MADE:- Agreement has been made by Power Reactor development Co., Detroit, Mich., with U. K. Atomic Energy Authority which formalizes and expands an exchange of information between the two parties concerning the development of fast reactor systems. The agreement, effective Oct. 1, 1958, is for five years. The UKAEA has built an experimental fast reactor at Dounreay, Scotland, which will be put into operation in 1959. Power Reactor Development is building a sodium-cooled fast breeder reactor for the Enrico Fermi power plant near Monroe, Mich., scheduled for operation late in 1960. In addition to providing for the direct exchange of information of a general nature, this UKAEA-PRDC agreement also provides for the exchange of detailed information covering design and characteristics of the two fast reactor projects and the exchange of qualified personnel.

NUCLEAR FUELS PLANT COMPLETED:- Nuclear reactor cores are now being assembled at the new nuclear fuels plant of Olin Mathieson Chemical Corp., Montville, Conn., following recent start-up of production there. Olin Mathieson had entered the nuclear energy industry some two years ago with pilot-plant operations in New Haven, Conn., and broke ground in Oct., 1957, for its new plant.

BRITISH-AMERICAN COMPANY IN NUCLEAR EQUIPMENT FIELD:- Jointly owned British-American company is being set up by Savage & Parsons, Ltd., Watford, England, and the mechanical division of General Mills, Inc., Minneapolis, Minn. The company will design, manufacture and market remote handling equipment for nuclear facilities. This will include mechanical and powered manipulators; reactor fuel loading and unloading systems; reactor maintenance systems; and other remote handling apparatus and auxiliary protective equipment.

PROFIT DOWN FOR FIRM WITH LARGE NUCLEAR INTERESTS:- Vitro Corp. of America, firm with diversified nuclear interests, had net profit after taxes for the first six months of 1958 of \$276,254. This compares with net profit of \$774,333 for the like 1957 period. This was on gross revenues of \$33,404,985 for the 1958 period, an increase of \$3,281,546 over the corresponding period of last year. Company divisions operating essentially on defense and USAEC contracts showed improved volume and satisfactory performance for the six month period, with divisions on commercial business reflecting current fall-off in volume and profits, J. Carlton Ward, president, told his stockholders.

NEW PRODUCTS, PROCESSES, SERVICES...in the nuclear field...

NEW PRODUCTS:- New automatic recording gamma scintillation spectrometer includes pulse height analyzer with 3-speed reversible motor drive; dual rate meter; and dual recorder. Instrument is said by manufacturer to be capable of high accuracy in producing simultaneous linear and logarithmic plots. --Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

New particle accelerator, trade-named Dynamitron, is said to deliver ten times more beam current than other machines now being made, for the same capital investment. Its large beam output at constant potential is obtained without moving parts, since it is "all electronic" in design. Substantial output current, and constant well-regulated voltage are also said to be characteristics of the accelerator. --Radiation Dynamics, Inc., Westbury, L.I.

MANUFACTURERS' NEWS:- New firm, Radiation Dynamics, Inc., producing particle accelerators (Dynamitrom) as described above, is headed by Kennard Morganstern, with Marshall Cleland, vice-president. Design, engineering and development of the apparatus represent four years of work by Dr. Cleland, under the name of Teleray Corp., St. Louis, Mo. Radiation Dynamics, successor to this firm, now occupies 6,000 sq. ft. in Westbury Industrial Park for offices and plant. In an additional 1,000 sq. ft. a radiation facility is being built by the firm, for commercial irradiation jobs.

Pitch and roll compensating instruments for use in nuclear propulsion plants are being delivered to Westinghouse Electric Corp. by Fairchild Camera and Instrument Corp., Syosset, L.I., N.Y., under contract calling for Fairchild to deliver 11 such instruments. First installation will be in the U. S. Navy's nuclear submarine Skipjack, for which Westinghouse is designing and developing nuclear propulsion plant; others are for Skipjack-class nuclear powered submarines.

Sales of model 121 high-precision rolling mill, and model 6F swaging machine have been made by Fenn Manufacturing Co., Newington, Conn., to National Lead Co.'s Magnus Metal division, Albany, N.Y. Fenn has also supplied recently a 25,000-lb. draw bench to General Electric Co.'s Hanford Atomic Power Operations, and a model 4-F rotary swaging machine to Phillips Petroleum Co.'s atomic energy division, at Idaho Falls, Idaho. (Fenn, large U.S. producer of metal forming equipment to the nuclear industry, supplies equipment based on particular needs of this industry.)

Orders on hand by DEGUSSA (Deutsche Gold un Silber Scheideanstalt), Frankfurt, Germany, include nuclear fuel element fabrication equipment for India; two high vacuum furnaces for experimental uranium fuel element production for Italian industrial firms; and two furnaces for sintering uranium oxide pellets for a Swedish industrial firm. DEGUSSA also noted that it had supplied in 1956 a pilot plant for Argentina producing 10 metric tons of reactor grade uranium per year from concentrates, and that it had supplied India with pilot plant for production of 20 metric tons per year of reactor grade uranium metal.

PRODUCT NEWS:- Heavy water will now be leased by the USAEC as well as sold in an expansion of the Commission's policy, which previously had been limited to sales only. Leases, both foreign and domestic, will be in quantities of one short ton or more for the initial inventory requirements of the reactor being supplied; charges will be 4% per year of the sales price of \$28 per pound. For domestic research or medical reactors the term of the lease will be for the period for which the reactor is licensed; for such foreign reactors, the lease term will be the estimated useful life of the reactor. Information on domestic leases is available from USAEC, Savannah River Operations Office, P. O. Box A, Aiken, S. C. For foreign leases, inquiries should be sent to USAEC, Division of International Affairs, Wash. 25, D.C.

Extension of its line of self-excited luminous tubes to emergency and exit markers for aircraft has been made by United States Radium Corp., Morristown, N. J. The firm is now showing prototype models of the markers, which can provide uninterrupted light for periods up to 25-years. The units are self contained, consisting of glass tubes internally coated with a special phosphor and filled with tritium gas. When the coating is excited by the tritium gas, visible light is produced.

NEW BOOKS & OTHER PUBLICATIONS...

Shorter Term Biological Hazards of Fallout Field. Papers presented at symposium in Wash., D.C., on Dec. 12, 13 and 14, 1956. 236 pages. No. Y3. At7:2 F 19. (\$1.75)..... Handbook of Federal Regulations on Transportation of Radioactive Materials. Prepared by USAEC. No. Y3. At7:6T68/958 (25¢)..... Physical Research Program as it Relates to the Field of Atomic Energy. Hearings before subcommittee of Joint Congressional Committee on Atomic Energy, Feb. 3-14, 1958. (\$2.25) --Sup't. of Documents, Wash. 25, D. C.

Effects of Nuclear Radiation on Military Specification Paints, by L. A. Horrocks. Work done at Wright Air Development Center, Ohio. No. PB-131599. 29 pages. (\$1.00)..... Isotope Techniques in Biological Sciences: A Selected List of References. No. TID-3512. 44 pages. (\$1.25)..... Hazards and Safety Measures for Nuclear-Powered Merchant Ships; An Annotated Bibliography. 272 pages. No. So-6200. (\$4.00)..... An Alpha, Beta, Gamma Hand and Shoe Counter-Model II. No. HW-54553. (50¢)..... Scintillation Alpha-Beta-Gamma Fixed Filter Counter. 12 pages. No. HW-54947 (Revised) (50¢)..... Design and Use of a 23,000 Curie Cobalt-60 Facility. Work done at Wright Air Development Center, Ohio. No. PB-131619. 101 pages. (\$2.50)..... Standardized X-Ray Field Range. Report of work at U. S. Naval Research Laboratory, Wash., D.C. 17 pages. No. PB-131643. (50¢) --Office of Technical Services, Wash. 25, D.C.

NOTES:- Publications made available to the public by U. K. Atomic Energy Authority are in lists no. 31 (June, 1958) and 32 (July, 1958) compiled by the library of the Atomic Energy Research Establishment, Harwell, England. Included are documents which may be bought from H. M. Stationery Office.

Brochure issued by Consolidated Edison Co., 4 Irving Pl., New York, N.Y., describes in 16 pages the company's nuclear power station being erected at Indian Point, N.Y. Included are estimated costs and capacities, as well as estimated power production costs. Title of brochure is Nuclear Electric Generating Station.

Canada's First Nuclear Power Station is title of booklet issued by civilian atomic power department of Canadian General Electric Co., Ltd., Peterborough, Ontario, Canada. It describes the 20,000 kw nuclear power station now under construction as joint project of Atomic Energy of Canada, Ltd., Hydro-Electric Power Commission of Ontario, and Canadian General Electric Co., Ltd.

Controlled Thermonuclear Fusion: Its Meaning to the Radio and Electronic Engineer and Its Promise of the Future are two papers reprinted from RCA Review, June 1958. Authors George Warfield and Edward W. Herold are at RCA Laboratories, Princeton, N.J.

New catalog (no. 1058) of radiochemicals offered by Research Specialties Co., 2005 Hopkins St., Berkeley 7, Calif., shows some 38 new carbon-14 labeled compounds the company is now producing. The firm believes it now offers the largest listing in the U.S. of high purity C-14 labeled hydrocarbons, including its exclusive spectro-grade isoctane-c-14.

Bulletins 58-120, 58-123, and 59-125 of Borg-Warner Corp., 310 S. Michigan Ave., Chicago 4, Ill., describe that firm's Model DZ41 gamma ray spectrometer; Model DZ15 single channel pulse height analyzer; and Model DZ4 fast-slow coincidence circuit for nuclear uses.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- Homestake-Sapin Partners has now put on stream one 750 ton-per-day unit of its 1500 ton-per-day uranium processing mill at Grants, N.M. The firm is a limited partnership of Homestake Mining, and Sabre-Pinon. (The USAEC is closing its ore buying station at Grants Oct. 1, 1958; this was opened July 5, 1956 for independent producers who needed a market. Commercial operations at Grants, furnishing such a market, in addition to Homestake-Sapin, are processing plants operated by The Anaconda Co.; Homestake-New Mexico Partners; and Phillips Petroleum Co. Kermac Nuclear Fuels Corp. is constructing a fifth plant for the area.)

FRANCE:- Reserves of uranium in the Shinkolobwe mine of Union Miniere du Haut-Katanga are practically exhausted, according to the Euratom Commission's first report. Although France has proved ore reserves of 15,000 tons, with total resources said to be ten times that quantity, and treatment capacity of her plants will reach 800 tons of uranium oxide by 1959, and 1,500 tons by 1961, the quantities available are well below Euratom's requirements, the report states.

ATOMIC ENERGY PATENT DIGEST...

ISSUED AUGUST 19, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1)

Process for producing titanium, zirconium and alloys of titanium and zirconium by reduction of oxides of titanium or zirconium. R. A. Kieffer, F. Benesovsky, Reutte, Tirol, Austria, inventors. No. 2,848,315 assigned to Schwarzkopf Development Corp. (2) Mass spectrometer. J. G. Skinner, A. E. Butcher, inventors. No. 2,848,618 assigned to Phillips Petroleum Co.

ISSUED AUGUST 19, 1958 to GOVERNMENT ORGANIZATIONS:- (1) Remote retrieving tool. L.W. Fromm, Jr., inventor. No. 2,848,266 assigned to USAEC. (2) Process of separating uranium from aqueous solution by solvent extraction. J. C. Warf, inventor. No. 2,848,300 assigned to USAEC. (3) Separation of plutonium hydroxide from bismuth hydroxide. G. W. Watt, inventor. No. 2,848,501 assigned to USAEC. (4) Fuel elements from nuclear reactors and process of making. W. E. Roake, inventor. No. 2,848,325 assigned to USAEC. (5) Nitric acid pickling process. E. R. Boller, L. D. Eubank, J. W. Robinson, inventors. No. 2,848,351 assigned to USAEC. (6) Fuel elements and method of making. R. A. Noland, C. Marzano, inventors. No. 2,848,352 assigned to USAEC. (7) Nuclear reactor. M. Treshow, inventor. No. 2,848,404 assigned to USAEC. (8) Process for zinc chloride activating a dehalogenation reaction. W. T. Miller, inventor. No. 2,848,505 assigned to USAEC. (9) Ion source unit for calutron. W. M. Brobeck, inventor. No. 2,848,619 assigned to USAEC. (10) Ion producing mechanism. J. G. Backus, inventor. No. 2,848,620 assigned to USAEC. (11) Calutron ion source. F. Oppenheimer, inventor. No. 2,848,621 assigned to USAEC. (12) Calutron ion source. F. Oppenheimer, inventor. No. 2,848,622 assigned to USAEC. (13) Gamma and x-ray dosimeter and dosimetric method. G. V. Taplin, C. H. Douglas, S.C. Sigoloff, inventors. No. 2,848,625 assigned to USAEC.

ISSUED AUGUST 26, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Linear electron accelerators. M. Crowley-Milling, inventor. No. 2,849,634 assigned to Metropolitan-Vickers Electrical Co., Ltd., London, England.

NOTES:- This LETTER, August 5, 1958, page 4, stated in error that U. S. Patent No. 2,844,707 was assigned to USAEC. The correct assignee is The Texas Co., and we hope no inconvenience was caused our readers by this error.

Trade-name AccuTrol has been published Aug. 29, 1958 for opposition under SN 29,215. Mark is used by Industrial Nucleonics Corp., Columbus, Ohio, for automatic controlling equipment for regulating industrial processes.

MEETINGS, COURSES, SYMPOSIA...

SYMPOSIA:- Under sponsorship of Institute of Physics, symposium on Nuclear Fuel Cycles will be held in London, England, Jan. 22-23, 1959. The applied physics aspects of the fuel cycles which form the basis of the British nuclear power program will be covered in papers to be presented. Further details from Secretary, Institute of Physics, 47 Belgrave Sq., London SW 1, England.

Advances in Tracer Applications of Tritium will be symposium sponsored by New England Nuclear Corp., in association with Atomic Associates, Inc., and Packard Instrument Co., Inc. Scheduled for Oct. 31, in New York, it will be second such symposium under sponsorship of these firms. Details may be obtained from New England Nuclear Corp., 575 Albany St., Boston 18, Mass. (Copies of proceedings of last year's symposium may be obtained free from the firm.)

International Symposium on Nuclear Electronics is scheduled for September 16-20, 1958, at UNESCO House, Paris, France. Details are available from Colloque International Electronique Nucleaire, 10 Ave. Pierre-Larousse, Malakoff (Seine), France.

First International Symposium on Nuclear Fuel Elements, under sponsorship of Sylvania-Corning Nuclear Corp., and Columbia University, will be held Jan. 28-29, 1959, at Columbia. Further information may be obtained from Henry H. Hausner, 730 Fifth Ave., New York 18, N.Y.

MEETINGS:- American Nuclear Society has scheduled its Winter meeting this year for Dec. 8-10, in Detroit, Mich. Program is available from Octave DuTemple, 86 E. Randolph St., Chicago, Ill.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER